

Amendment to the Claims:

1-2. (Cancelled)

3. (Currently Amended) A medical diagnostic imaging system for acquiring images of a patient, the imaging system being coupled to a hospital network which hospital network includes a hospital database which stores patient data including patient images, and a plurality of hospital computers, the imaging system comprising:

5 a scanner which scans the patient using a selected examination protocol to generate image data;

a scanner control which controls the scanner, the scanner control being coupled to the scanner and the hospital network, the scanner control including:

10 a display,

an applications database which is configurable by a user, and

15 an interface which causes the display to display interactive user interface screens on the display, which user interface screens allow the user to configure the applications database, enter a patient's limiting parameters, select from a list of selectable examination protocols, and interactively control the scanner by activating icons and buttons displayed thereon;

20 an examination protocol database which stores a plurality of examination protocols;

25 a protocol selection means for choosing computer programmed to:
choose a limited number of selectable examination protocols from among the plurality of examination protocols stored in the examination protocol database in response to receiving the patient's limiting parameters one of entered by the user into data entry fields displayed on the user interface screens, from the hospital database, or from a remote terminal, and displaying only the chosen examination protocols on the display from which the user selects the

30 selected examination protocol such that the user is limited to selecting
only among chosen examination protocols chosen by the protocol
selection means.

4. (Cancelled)

5. (Currently Amended) The system as set forth in claim 3,
further including:

5 generated with the selected examination protocol, or patient's limiting parameters
entered by the user into data entry fields to generate patient images.

6-8. (Cancelled)

9. (Previously Presented) The system as set forth in claim 3,
wherein the post-processing means includes:

5 a visualization configuration means for searching the hospital database
for visualization parameter preferences of a diagnosing radiologist and adjusting
level, zoom, slice and slab thickness, windowing, and other visualization parameters
in accordance with the diagnosing radiologist's preferences from the hospital
database.

10. (Cancelled)

11. (Currently Amended) The system as set forth in claim 3,
wherein the scanner is a CT scanner and the interface ~~includes: a~~ parameters
~~optimization means for automatically selecting-selects~~ optimization parameters of an
x-ray source of the CT scanner based on the selected examination protocol to correct:

5 voltage supplied to the CT scanner x-ray source,
amperage supplied to the CT scanner x-ray source, and
an x-ray dose supplied to the patient.

12. (Currently Amended) The system as set forth in claim 5,
wherein the interface includes computer is further programmed to :

a pre fetch means for searching search the hospital database for
previous images of the patient and automatically sending send the previous images to
5 a diagnosing physician's hospital computer without waiting for a transfer request
from the physician.

13. (Currently Amended) The system as set forth in claim 5,
wherein the selection means chooses computer is further programmed to:
choose the selectable examination protocols in accordance with from
examination protocols that were used for previous examinations and were previously
5 stored in the hospital database of the patient to generate the patient images.

14. (Currently Amended) The system as set forth in claim 12,
wherein the previous current images have been generated using the selected
examination protocol are generated by a different imaging modality and further
including: an auto registration means for registering and displaying than the previous
5 images and wherein the computer is further programmed to automatically register and
display the previous and current images at the physician's computer.

15. (Currently Amended) The system as set forth in claim 3,
wherein the interface includes computer is further programmed to:
a slab review means for merging merge image slices acquired by the
scanner into slabs of selected thickness which is interactively supplied by the user,
5 displaying the slabs on the display, and separating slabs selected by the operator back
into their constituent individual slices for display to the user on the display.

16. (Currently Amended) The system as set forth in claim 3,
wherein the interface includes computer is further programmed to:

a—log—means for collecting collect the entered patient's limiting
parameters, scanner running time, examination protocols used and other scan
5 information for each scanned patient, and generating a digital log book.

17. (Currently Amended) The system as set forth in claim 16,
further including:

a remote statistics means for processor programmed to remotely
accessing—and mining—access and mine the digital log book to provide statistical
5 analysis for optimizing scanner use.

18. (Currently Amended) The system as set forth in claim 3,
further including:

a remote, portable computer-on-a-PDA;
wherein at the beginning of a scan procedure, the interface
5 automatically uploads the selected examination protocol from the remote portable
computer-or PDA.

19-21. (Cancelled)

22. (Currently Amended) A method of optimizing a throughput
of [[the]] a diagnostic image processing system-of claim 2, comprising the steps of:

storing a plurality of the examination protocols in an application
database in a hospital network;

5 entering the patient limiting parameters into the application database
prior to scanning the patient;

matching the patient limiting parameters with one or more optimal
examination protocols stored in the application database;

displaying a list of the one or more optimal examination protocols for
10 the scanning of the patient in response to the results of the matching;

displaying the list to the user to use in selecting the examination protocol to be used in the patient information.

23-24. (Cancelled)

25. (Previously Presented) The system as set forth in claim 3, wherein the patient's limiting parameters include patient size, patient age, a radiologist identification, radiologist preferences, and a nature and region of the patient to be scanned.

26. (Previously Presented) A medical diagnostic imaging system coupled to a hospital network, which hospital network interconnects a hospital archive database, computers, computer displays, and a diagnostic scanner which scans a patient using a selected examination protocol, the medical diagnostic imaging system

5 including:

- a display device; and
- a computer programmed to:
 - select a limited number of examination protocols from a menu of available protocols in accordance with entered patient size, patient age, radiologist
 - 10 identification, radiologist preferences, and a nature and region of the patient to be scanned, and generating an operator interactive display on the display device of the limited number of examination protocols, such that a user selects the selected examination protocol to be used to scan the patient from the limited number of display examination protocols.

27. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

- automatically, without user instructions, commence post-processing during data acquisition in accordance with types and format of images most
- 5 commonly generated for the selected examination protocol.

28. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the scanner is a CT scanner and the computer is further programmed to:

optimize a tube voltage and tube current for an x-ray source of the CT scanner in accordance with an operated selected protocol.

29. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

search the hospital archive database for images of the patient currently undergoing examination and routing the archive patient images directly to the display terminal of a diagnosing radiologist, automatically without waiting for a transfer request.

30. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

search the hospital archive database to determine if a current scan is a follow-up scan, determine parameters and examination protocols used in prior scans, 5 and set the scanner to conduct the follow-up examination using the same parameters and examination protocols.

31. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

search the hospital archive database to determine preferences of a diagnosing radiologist and adjust level, zoom, slice and slab thicknesses, windowing, 5 and other display characteristics in accordance with the retrieved preferences of the diagnosing radiologist.

32. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

merge groups of slice images into a smaller number of slab images, sequentially display the slab images, and display the individual slice images 5 corresponding to each slab image designated by a diagnosing radiologist.

33. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

generate a series of prompts to an operator to lead the operator sequentially through an imaging procedure.

34. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

for each scanner, automatically generate a digital log book by collecting entered patient information and scan information for each patient examined 5 by the corresponding scanner.

35. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

at the beginning of a scan procedure, automatically upload examination protocol information previously submitted from a remote computer or PDA.

36. (Previously Presented) The medical diagnostic imaging system as set forth in claim 26, wherein the computer is further programmed to:

automatically commence post-processing during data acquisition in accordance with types and format of images most commonly generated for a selected 5 examination protocol; and

search the hospital archive database for images of the patient currently undergoing examination and routing the archive patient images directly to a display terminal of a diagnosing radiologist, automatically without waiting for a transfer request; and

- 10 search the hospital archive database to determine if a current scan is a follow-up scan, determining parameters and examination protocols used in prior scans, and setting the scanner to conduct the follow-up examination using the same parameters and examination protocols; and
- 15 search the hospital archive database to determine preferences of a diagnosing radiologist and adjust level, zoom, slice and slab thicknesses, windowing, and or other display characteristics in accordance with the retrieved preferences of the diagnosing radiologist; and
- 20 generate a series of prompts to an operator to lead the operator sequentially through an imaging procedure;
- 25 for each scanner, automatically generate a digital log book by collecting entered patient information and scan information for each patient examined by the corresponding scanner; and
- at the beginning of a scan procedure, automatically uploading examination protocol information previously submitted from a remote computer or PDA.